



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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D407-667-205
Job Sheet 197279



Part No: D407-667-205

Job Qty: 1 ea

Part Name: Aft Crosstube - High 407



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 7/4/19

Job Tracking No:

Due Date: 7/18/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: IIN-D206-667 REV D D407-667-245 REV G IPP Rev:D Add Magnobond,Rubber Cushion,Clamps 07-02-19
JLM IPP Rev:E 08-05-22 add comment seq. 6 & QC15 & QC5 DD verf:EC IPP Rev:F 08-06-12 add comment
seq. 24 DD verf:EC IPP Rev:G 08-08-19 revE per dwg DD verf:EC IPP Rev H 09.01.06 ECN 08-562 EC
verf:DD IPP Rev:I 10.04.07 revise route seq. in bom DD verf:JLM IPP Rev J 11.04.26 removed abrasion strip
ecn 11-551 EC verf:DD IPP REV:K 11.10.03 DEOD407-667-245-F-2 DD verf:EC

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup	Run		
					Hrs	Hrs	Workcenter / Supplier Lead Time	
110	Packaging 1 - Pick Kit	1		7/18/19	0.00	0.00	Packaging 1 - 1	
		pcs					Packaging 1 - 2	
							Packaging 1 - 3	
							Packaging 1 - 4	
							Packaging 1 - 5	
							Packaging 1 - 6	
							Packaging 1 - 7	
							Packaging 1 - 8	
							Packaging 1 - 9	
							Packaging 1 - 10	
							Packaging 1 - 11	
							Packaging 1 - 12	
							Packaging 1 - 13	
							Packaging 1 - 14	
							Packaging 1 - 15	
							Packaging 1 - 16	
							Packaging 1 - 17	
							Packaging 1 - 18	
							Packaging 1 - 19	
							Packaging 1 - 20	
							Packaging 1 - 21	
							Packaging 1 - 22	
							Packaging 1 - 23	
							Packaging 1 - 24	
							Packaging 1 - 25	
							Packaging 1 - 26	
							Packaging 1 - 27	
							Packaging 1 - 28	

N/A



Container No: S225779



Part: D407-667-205

Job No: 197279

Serial No/Batch: S225779

Revision: D / G

Inspector:

Exp Date:

Instructions: TC 6TC SH01-5 Issue 3, 5AA-270, SR01304NY 05/12/15, JCAB JAI

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7/4/2019

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					Packaging 1 - 29	
					Packaging 1 - 30	
					Packaging 1 - 31	
					Packaging 1 - 32	
					Packaging 1 - 33	
					Packaging 1 - 34	
					Packaging 1 - 35	
					Packaging 1 - 36	
120 Skidtubes - Bend - 2 - B4B	1 pcs	7/18/19	1.99 3.33	Skidtubes - Bend - B4B-		JW 19-10-23
130 QC 15	1 pcs	7/18/19	0.00 0.00	QC 15 - 12		
				QC 15 - 3		
				QC 15 - 47		
				QC 15 - 49		
				QC 15 - 58		
				QC 15 - 9		DAS
				QC 15 - 68		OCT 24 2019 68
140 Crosstubes - 2 - B4B	1 pcs	7/18/19	0.00 3.47	Crosstubes - 1 - B4B		9.89
				Crosstubes - 2 - B4B		
				Crosstubes - 3 - B4B		JW 19-10-25
				Crosstubes - 4 - B4B		
150 Crosstubes - 3 - B4B	1 pcs	7/18/19	0.00 0.91	Crosstubes - 1 - B4B		
				Crosstubes - 2 - B4B		
				Crosstubes - 3 - B4B		
				Crosstubes - 4 - B4B		
160 QC 7	1 pcs	7/18/19	0.00 0.00	QC 7 - 10		
				QC 7 - 13		
				QC 7 - 14		
				QC 7 - 15		
				QC 7 - 17		
				QC 7 - 18		
				QC 7 - 19		
				QC 7 - 2		
				QC 7 - 28		
				QC 7 - 3		
				QC 7 - 30		
				QC 7 - 34		
				QC 7 - 36		
				QC 7 - 37		
				QC 7 - 41		
				QC 7 - 47		
				QC 7 - 48		
				QC 7 - 51		
				QC 7 - 58		
				QC 7 - 59		
				QC 7 - 60		
				QC 7 - 9		
				QC 7 - 68		
				QC 7 - 50		
				QC 7 - 67		
				QC 7 - 40		DAS
				QC 7 - 24		OCT 30 2019 40
				QC 7 - 43		8-89
				QC 7 - 61		
				QC 7 - 81		
170 QC 5	1 pcs	7/18/19	0.00 0.00	QC 5 - 10		
				QC 5 - 12		
				QC 5 - 17		
				QC 5 - 18		

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				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	
				QC 5 - 68	
				QC 5 - 9	
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
180 Outsource - 2 - NDT per QSI038	1 pcs	7/18/19		SKY002-VC	2
190 Packaging 2-1 - Receive - B4B	1 pcs	7/18/19	0.00 0.00	Packaging 2 - 1 - B4B	
				Packaging 2 - 2 - B4B	
				Packaging 2 - 3 - B4B	
				Packaging 2 - 5 - B4B	
				Packaging 2 - 4 - B4B	
				Packaging 2 - 6 - B4B	
				Packaging 2 - 7 - B4B	
				Packaging 2 - 8 - B4B	
				Packaging 2 - 9 - B4B	
				Packaging 2 - 10 - B4B	
				Packaging 2 - 11 - B4B	
				Packaging 2 - 12 - B4B	
				Packaging 2 - 13 - B4B	
				Packaging 2 - 14 - B4B	
				Packaging 2 - 15 - B4B	
				Packaging 2 - 16 - B4B	
				Packaging 2 - 17 - B4B	
				Packaging 2 - 18 - B4B	
				Packaging 2 - 19 - B4B	
				Packaging 2 - 20 - B4B	
				Packaging 2 - 21 - B4B	
				Packaging 2 - 22 - B4B	
				Packaging 2 - 23 - B4B	
				Packaging 2 - 24 - B4B	
				Packaging 2 - 25 - B4B	
				Packaging 2 - 26 - B4B	
				Packaging 2 - 27 - B4B	
				Packaging 2 - 28 - B4B	
				Packaging 2 - 29 - B4B	
				Packaging 2 - 30 - B4B	
				Packaging 2 - 31 - B4B	
				Packaging 2 - 32 - B4B	
				Packaging 2 - 33 - B4B	
				Packaging 2 - 34 - B4B	
				Packaging 2 - 35 - B4B	
				Packaging 2 - 36 - B4B	
200 QC 6	1 pcs	7/18/19	0.00 0.00	QC 6 - 9	
				QC 6 - 68	
				QC 6 - 61	
				QC 6 - 40	
210 Spray Paint - 2 - B4B	1 pcs	7/18/19	0.00 1.39	Spray Paint - 1 - B4B	
				Spray Paint - 2 - B4B	
				Spray Paint - 3 - B4B	
				Spray Paint - 4 - B4B	

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7/14/2019

[Dart Hawkesbury] Job Sheet - Lajeunesse, Marie

220 QC 14	1 pcs	7/18/19	0.00 0.00	QC 14 - 15	
				QC 14 - 2	
				QC 14 - 34	
				QC 14 - 41	
				QC 14 - 51	
				QC 14 - 58	
				QC 14 - 59	
				QC 14 - 9	DAS
				QC 14 - 68	NOV 04 2019 68
				QC 14 - 40	9-89
				QC 14 - 19	
				QC 14 - 43	
				QC 14 - 24	
				QC 14 - 61	
				QC 14 - 81	DAS
					41 NOV 07 2019
					9-89
230 Crosstubes - 4 - B4B	1 pcs	7/18/19	0.00 3.47	Crosstubes - 1 - B4B	
				Crosstubes - 2 - B4B	
				Crosstubes - 3 - B4B	
				Crosstubes - 4 - B4B	
240 QC 5	1 pcs	7/18/19	0.00 0.00	QC 5 - 10	
				QC 5 - 12	
				QC 5 - 17	
				QC 5 - 18	
				QC 5 - 19	
				QC 5 - 22	
				QC 5 - 24	
				QC 5 - 3	
				QC 5 - 43	
				QC 5 - 49	
				QC 5 - 51	
				QC 5 - 58	DAS
				QC 5 - 68	NOV 11 2019 68
				QC 5 - 9	9-89
				QC 5 - 50	
				QC 5 - 30	
				QC 5 - 40	
250 Packaging 1-1 - Pick Kit - B4B	1 pcs	7/18/19	0.00 0.00	Packaging 1 - 1 - B4B	✓
				Packaging 1 - 2 - B4B	
				Packaging 1 - 3 - B4B	
				Packaging 1 - 4 - B4B	
				Packaging 1 - 5 - B4B	
				Packaging 1 - 6 - B4B	
				Packaging 1 - 7 - B4B	
				Packaging 1 - 8 - B4B	
				Packaging 1 - 9 - B4B	
				Packaging 1 - 10 - B4B	
				Packaging 1 - 11 - B4B	
				Packaging 1 - 12 - B4B	
				Packaging 1 - 13 - B4B	
				Packaging 1 - 14 - B4B	
				Packaging 1 - 15 - B4B	
				Packaging 1 - 16 - B4B	
				Packaging 1 - 17 - B4B	
				Packaging 1 - 18 - B4B	
				Packaging 1 - 19 - B4B	
				Packaging 1 - 20 - B4B	
				Packaging 1 - 21 - B4B	
				Packaging 1 - 22 - B4B	
				Packaging 1 - 23 - B4B	

Oscar

NOV 12 2019

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					Packaging 1 - 24 - B4B	
					Packaging 1 - 25 - B4B	
					Packaging 1 - 26 - B4B	
					Packaging 1 - 27 - B4B	
					Packaging 1 - 28 - B4B	
					Packaging 1 - 29 - B4B	
					Packaging 1 - 30 - B4B	
					Packaging 1 - 31 - B4B	
					Packaging 1 - 32 - B4B	
					Packaging 1 - 33 - B4B	
					Packaging 1 - 34 - B4B	
					Packaging 1 - 35 - B4B	
					Packaging 1 - 36	
260	QC 4	1	7/18/19	0.00 0.00	QC 4 - 28	
		pcs			QC 4 - 58	
					QC 4 - 69	
					QC 4 - 9	
					QC 4 - 46	
					QC 4 - 68	
					QC 4 - 72	
					QC 4 - 74	
					QC 4 - 75	
270	Packaging 3-1 - Stock - B4B	1	7/18/19	0.00 0.00	Packaging 3 - 1 - B4B	
		pcs			Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
275	DC - 1 - B4B	1	7/18/19	0.00 0.00	DC - 1 - B4B	

DAS
78 NOV 12 2019
9-89

DAS
78 NOV 12 2019
9-89

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pcs	DC - 2 - B4B	DAS
280 QC21-FG	1 Ea	7/18/19 0.00 0.00
Part Op 110 - (Pick Kit)	QC21	NOV 12 2019
Descriptions: 120 - (CNC Delta 100 Bender) 1-Bend tube as per Dwg D407-667-245 using CNC bender program 407 Aft and Folio 21 130 - (QC15- Crosstube Dimensional Check) 140 - (Crosstubes) ***** ENSURE PROPER JIG POSITIONING BEFORE DRILLING***** , VERIFIED BY: ***** 1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill all (3) top holes. Holes facing inboard. Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Note: FWD side has 3X top holes facing inboard. 3- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for paint. 4- Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins. Drill ONLY 2 top holes ONLY plug most bottom hole to prevent accidental drilling. Drill holes and ream using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill only the top (2) holes. Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245 5-Drill aft rivet holes using drill Jig DT8787 aft as per Dwg D407-667-245. Drill only the top (2) holes. 6- C'sink holes as per dwg D407-667-245. Allow rivet to sit below surface to compensate for paint. 8-*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***Debur & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-245 150 - (Crosstubes Chemical Conversion) ***IMMEDIATELY AFTER GRINDING*** 160 - (QC7-Inspect Chemical Conversion Coat) 170 - (QC5- Inspect part completeness to step on W/O) 180 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 0380 190 - (Receive & Inspect for Damage & Mat'l Certs) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 200 - (QC6- All purchased or subcontracted products) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 210 - (Spray Paint / NDT Room) *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** 1-Prime inside and outside crosstube as per DEO D407-667-245 and QSI 005 4.2 ***Mask underside of crosstube as shown*** 3- Apply clear coat as per dwg Clear Coat Batch: <u>Paint 5213125</u> 220 - (QC14- Inspect Spray Paint) Then, Wrap in plastic bag to protect from scratches 230 - (Crosstubes) 1- Install chaffing shield as per D407-667-245 using DT10096 to establish 8.90 dimension. Top holes should be facing up. ****Ensure chaffing is to be position "overlap" AFT**** A/R Proseal 890 Batch: <u>5229882</u> EXP: <u>6/20</u> 2- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 3-Install support with Scotch-Weld DP460 and install clamps as per Dwg D407-667-245 using installation jig DT9025. Torque clamps as per dwg A/R Scotch-Weld DP460 Batch: <u>5152077</u> EXP: <u>8/20</u> ***LET CURE FOR 24 HOURS*** CURE TIME: START: <u>19-11-7</u> FINISH: <u>19-11-8</u> 4-Install nut plates as per Dwg D407-667-245. Touch-up rivet heads with Imron paint. 240 - (QC5- Inspect part completeness to step on W/O) ***RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURE FOR 24HOURS AS PER DWG DEO*** 250 - (Pick Kit) 260 - (QC4- 100% Inspect kits for completeness) 270 - (Identify as per dwg & Stock Location: _____) Identify and in kanban rack 275 - (Document Control) Photocopy bluefile and create labels as per PPP D407-667-205 CHG009		

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D407-667-205TRN	Crosstube Turning Detail	1 pcs (1 ea)	110-Packaging 1 - Pick Kit	5196988
D2873-043	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D2873-045	Nut Plate Assembly	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D2894-1	2.75 Support	1 pcs (1 ea)	230-Crosstubes - 4 - B4B	
D3190-1	Chaffing Shield	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
D3595-075-430	Rubber Cushion - 0.75" Wide X 4.30" Long	2 pcs (2 ea)	230-Crosstubes - 4 - B4B	
MS20601-AD4W8	Rivet	14 Ea (14 ea)	230-Crosstubes - 4 - B4B	
MS21920-22	Clamp	4 Ea (4 ea)	230-Crosstubes - 4 - B4B	
MS21920-25	Clamp	2 Ea (2 ea)	230-Crosstubes - 4 - B4B	
AN6-10A	Bolt	10 Ea (10 ea)	250-Packaging 1-1 - Pick Kit - B4B	5205280 ✓
AN6-32A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5119858 ✓
AN6-34A	Bolt	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5166955 ✓
MS21042L5	Nut	4 Ea (4 ea)	250-Packaging 1-1 - Pick Kit - B4B	5214642 ✓
NAS1149D058J	Washer	18 Ea (18 ea)	250-Packaging 1-1 - Pick Kit - B4B	5177288 ✓

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
110-Packaging 1 - Pick Kit 230-Crosstubes - 4 - B4B	D407-667-205TRN	1	2	0
	D2873-043	② 5200844	39	0
	D2873-045	② 5186342	32	0
	D2894-1	① 5171568	11	0
	D3190-1	② 133928	45	0
	D3595-075-430	② 5077227	48	0
	MS20601-AD4W8	① 5155662	170	0
	MS21920-22	④ 5181728	84	0
	MS21920-25	② 5184760	83	0
	AN5-10A	10	110	0
250-Packaging 1-1 - Pick Kit - B4B	AN5-32A	4	277	0
	AN5-34A	4	41	0
	MS21042L5	4	477	0
	NAS1149D0563J	18	2,294	0
Part Specifications				
Specifications could not be found.				

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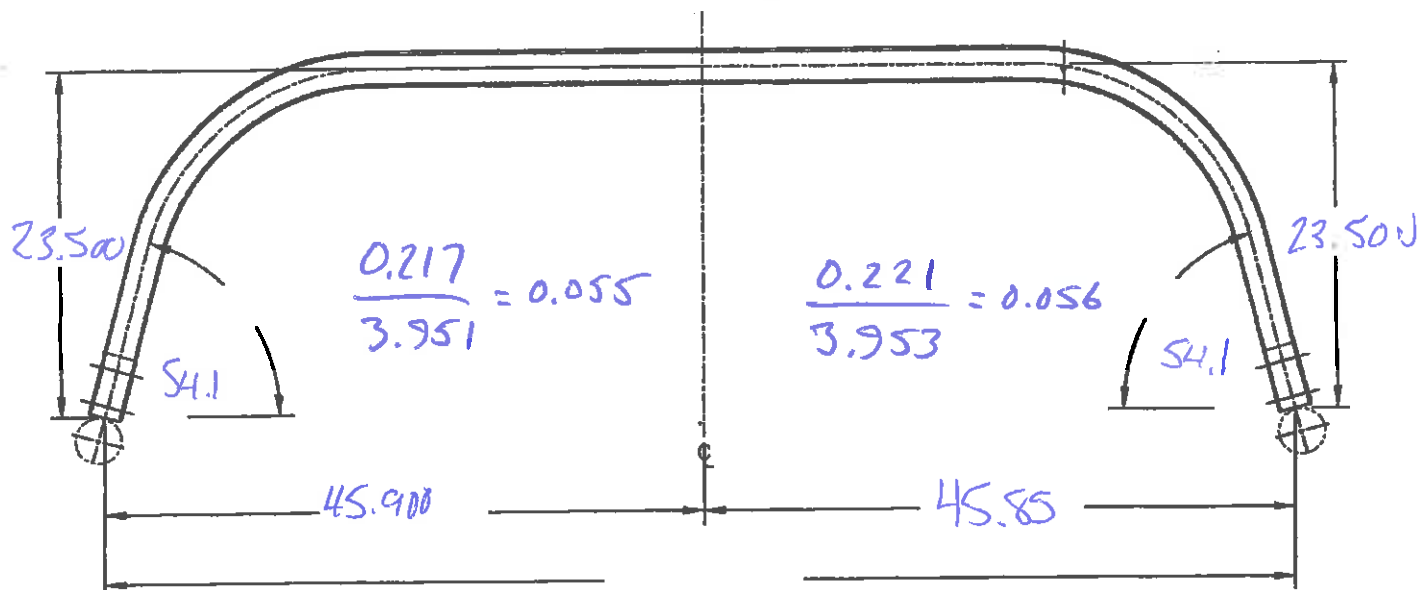

Container No: S225779

Part: D407-667-205
Job No: 197279
Serial No/Batch: S225779
 Revision: D / G
 Inspector:
 Exp Date:
 Instructions: TC STC SH01-5 Issue 3, 5AA, STC SR01304N

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 Email: sales@dartaero.com
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DART AEROSPACE LTD	Work Order: 1972R	
Description: Crosstube High Aft (407)	Part Number: D407-667-205	
Inspection Dwg: D407-667-245 Rev: G		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92.100
Bending Passes	6	--
Crushing	--	6%



1.867
2.084

	Side A	Side B
Bending Passes		
Crushing	5.5%	5.6%
Comments		

1.866
2.087

QC15 Inspection	DAS
Date	68 15.05.24 2019

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.22	Dwg Rev updated	KJ	
C	11.08.22	Dimensions updated	KJ	
D	11.09.30	Dimensions updated	KJ	
E	12.04.16	Added bending, crushing dimensions	KJ	
F	15.05.14	Dwg Rev updated	KJ	

Item	QTY	PART NUMBER	DESCRIPTION
	-245		
	X	D407-687-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
1	1	D6011-115	CROSSTUBE
2	2	D2873-043	NUT PLATE
3	2	D2873-045	NUT PLATE
4	1	D2894-1	SUPPORT
5	2	D3190-1	CHAFING SHIELD
6	2	D3596-003-430	RUBBER CUSHION
7	14	MS20801AD4W8	RIVET (OR NAS9302B-4-8)
8	4	MS21920-22	CLAMP
9	2	MS21920-25	CLAMP (OR MS21920-24)
10	AR	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD
11	AR	PROSEAL 880	SEALANT

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM DB011-115
- 2) FINISH: CHEMICAL CONVERSION COAT PER PART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER PART QSI 005 4.2
PAINT CROSSTUBE PER PART QSI 005 4.2
FOR HATCHED AREAS (ZN AB-2), MASK AS REQUIRED
TO APPLY PRIME AND APPLY CLEAR COAT ONLY
TOLERANCES ARE PER PART QSI 018 UNLESS OTHERWISE NOTED.
- 3) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 4) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 5) IDENTIFICATION: SCRIBE PART NUMBER "D407-687-245" AND BATCH NUMBER ON INSIDE OF CLIFF USING VIBRATING STYLUS.
- 6) WEIGHT: 27.7 lbs
- 7) PART IS SYMMETRIC ABOUT CENTERLINE.
- 8) RUN-OFF PART: BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BLENDING IS 9% BASED ON O.D.
- 10) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038
- 11) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS WITH D3596-003-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) APPLY A THIN COAT OF PROSEAL 880 ON INSIDE CONCAVE SURFACE OF D3190-1 CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL PROSEAL 880 ONTO CROSSTUBE BY APPLYING A THIN COAT OF PROSEAL 880 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.
- 16) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS 90 TO 70 DEGREES FROM BOTTOM OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. TORQUE CLAMPS ON D3190-1 CHAFING SHIELD 40 TO 50 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TIGHTENING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

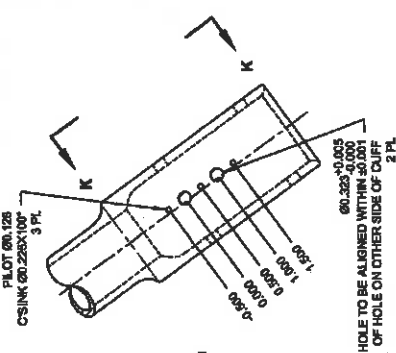
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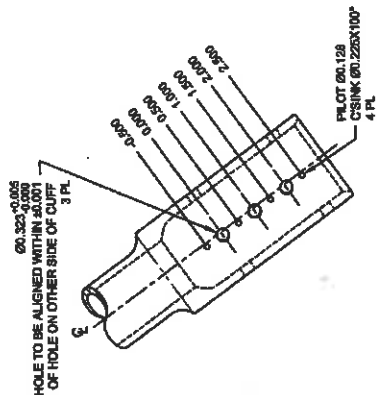
G	INCORP. DEC 0407-687-245-F14F2 (ZN DB-1, AB-1, DS-2, BS-2, CS-2), 8.00 WAS 8.53 (ZN DB-2); TORQUE REDUCED FOR CHAFING SHIELD (ZN AB-1); FINISH REVISED TO ALLOW MANUFAC. FLEXIBILITY (ZN CS-1)	RF	16.03.20
F	REFORMAT NOTES TO NEW STANDARDS (ZN BS-1); RELOCATED FLAG #6 (ZN AB-3) PER NCR 2105; REMOVED REF. & ADD TOLERANCES (ZN CS-3, CS-3 & DS-3)	RF	06.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN DS-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: PAR808-21 AND ECH#1225	MB	06.07.24
D	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -86T ABRASION STRIP, ADD MAGNIBOND 6986, ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKID TUBES	PH	06.07.26
B	ADD CHAFING SHIELD	CP	03.08.21
A	NEW ISSUE	CP	02.06.13
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.03.20		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D407-687-245			
SHEET 1 OF 4			
TITLE CROSSTUBE ASSY (407 HIGH AFT)			
SCALE NTS			
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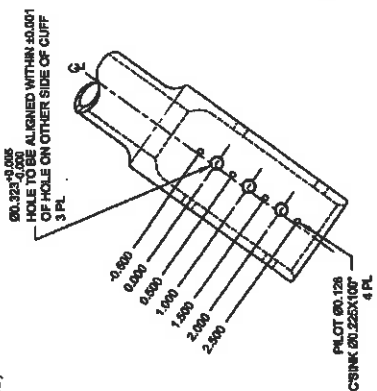
DETAIL E
SCALE 4X
(VIEW LOOKING FWD)

10 D407-667-005
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)

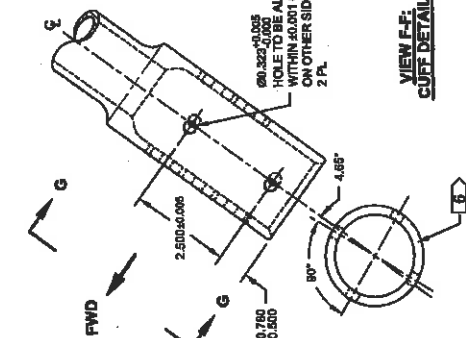
DETAIL J
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(VIEW LOOKING FWD)



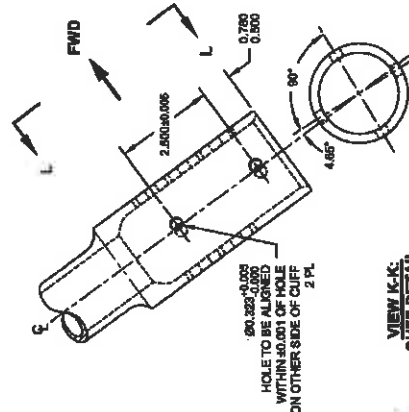
VIEW G-G
VIEW | LOOKING AFT. ROTATED



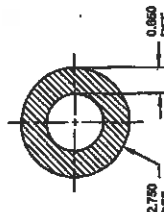
VIEW L-L
(VIEW LOOKING AFT, ROTATED)



VIEW F-F:
CUFF DETAIL



VIEW K-K:
CUFF DETAIL



SECTION H-H
SCALE 4X

DESIGN	40	DART AEROSPACE LTD HANKS BURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. G
CHECKED	40	D407-687-245	SHEET 3 OF 4
MFG. APPR.	40	TITLE	SCALE
APPROVED	40	CROSS TUBE ASSY (407 HIGH AFT)	NTS
DE APPR.	40	CONTRACT # 0011 FOR TUBE AEROSPACE LTD	
DATE	15.03.20	THIS DOCUMENT IS PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only

Job: _____ Part No. _____		DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is		DEPARTMENT/PROCESS ☐ Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality					
Date :	Sequence #:	QTY Affected :		MRB (QS1042)					
Description Work Order Deviation				Disposition					
Completed By				Lead hand / Supervisor					
QC / QA Coordinator									

Root Cause ☐ Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread									
		Other/Details:									



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER POHB044920



Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

Attention: Jenne, Heather

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB044920

PO Date: 10/29/19

Due Date: 10/31/19

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	200370	D3011- 1	D3011 D	Rappel Slide Bar : Various STC's - NDT per QSI038 4.1)1- LPI AS PER ASTM 1417 LEVEL 2 AS PER DWG D3011 2- Certificate of conformity is required	Firmed 24	-	10/31/19	4 pcs	0 pcs	4 pcs	\$70.00/pcs	\$280.00
2	197280	D407- 667- 205	IIN-D206-667 / D407-667-245 D / G	Aft Crosstube - High 407 : TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32- OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** Liquid Penetrant Inspection as per QSI 0380	Firmed X1	-	10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
	197279				Firmed	-	10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
	197727				Firmed	-	10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
	197728				Firmed	-	10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
Sub Total:								4	0	4		\$610.00



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB044920



Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
2	200903	D206-667-103	DSI9565, DSI9628, D206-667-143	Fwd Crosstube - High 206L / L1 / L3 / L4 TC STC SH01-5 Issue 3, FAA STC SR01304NY 05/12/15, JCAB JAPAN STC-32-OSA 02/02/28, EASA STC EASA.IM.R.S.01179 06/07/03, BRAZIL 2009S08-16 09/08/25, BRAZIL 2009S08-17 09/08/25 Outsource process - NDT per QSI038 4.1 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***	Firmed		10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
											6021.6100	
	200904				Firmed		10/31/19	1 pcs	0 pcs	1 pcs	\$152.50/pcs	\$152.50
Sub Total:								2	0	2		\$305.00

Grand Total: \$1,195.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 10/31/19 2:47 PM Dart.Guerin.Kimberley

**skyservice****Work Order Traveler**

Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO42375	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: POHB044920
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON THE FOLLOWING 6 CROSSTUBES and 4 RAPPEL SLIDE BARS:

P/N: D3011-1 RAPPEL SLIDE BARS JOB SHEET# 200370 (4 ea)

P/N: D407-667-205 AFT CROSSTUBE-HIGH 407 DAS
1- JOB SHEET# 197280 2- JOB SHEET# 197279 40
3- JOB SHEET# 197727 4- JOB SHEET# 197728 8-89

P/N: D206-667-103 FWD CROSSTUBE-HIGH 206L/L1/L3/L4
5- JOB SHEET# 200903 6- JOB SHEET# 200904

Action Taken:	Date:	Initial/Stamp:
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE AS PER ASTM1417M-16 -NO CRACK FOUND. PEN.(ZL37 , MPO21721) DEV.(SKD-S2, MPO11715), CLEANER(SKC-S, MPO MPO19368)	31 oct 2019	

Miscellaneous AD Review Performed: ☐ No applicable AD's noted ☐ Refer to action taken for applicable AD's

Description	Location	P/N	Qty	Batch	S/N Off	S/N On

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp 	Date: 31 oct 2019
Name: CHRISTIAN BRIEN		

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563J	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563J	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

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Revision: D
Date: 11.05.01

Change Record

PAGE 1 OF 1

Part Number: D407-667-205

Description: CROSSTUBE INSTALLATION, 407 HIGH AFT

[illegible]